**Drinking Water Standards**

**and Developments**

Ancient civilizations established themselves around water sources. While the importance of ample water quantity for drinking and other purposes was apparent to our ancestors, an understanding of drinking water quality was not well know or documented. With regard to drinking water, it took thousands of years for people to recognize that their senses alone were not accurate judges of water quality.

History and Developments:

Methods to improve the taste drinking water were recorded as early as 4000 B.C. Ancient Sankrit and Greek writings recommended water treatment methods such as filtering through charcoal, exposing to sunlight, boiling, and straining.

During the 1700s, filtration was established as an effective means of removing particles from water, although the degree of clarity achieved was not measurable at that time. By the early 1800s, slow sand filtration was beginning to be used regularly in Europe.

In the late 1800s, Louis Pasteur demonstrated the “theory” of disease, which explained how microscopic organisms (microbes) could transmit disease through media like water.

Federal regulation of drinking water quality began in 1914, when the U.S Public Health Service set standards of drinking water, an expanded these standards in 1925,1946, and 1962.

By the late 1960s it became apparent that the aesthetic problems, pathogens and chemicals identified by the Public Health Service were not the only drinking water quality concerns. Industrial and agricultural advances and the creation of new chemicals were finding their way into water supplies through factory discharges, street and farm field runoff, and leaking underground storage and disposal tanks.

Chemical contamination of water supplies was only one of many environmental and health issues that gained the attention of Congress and the public in the early 1970s.

A law about drinking water with significant amendments in 1984 and 1996, is administered by the U.S Environmental Protection Agency’s Office of Ground Water and Drinking Water (EPA) and its partners.

According to several EPA surveys, from 1976 to 1995, the percentage of small and medium community water systems that treat their water has steadily increased.

Standard:

It is known that no one method of filtering or purifying water is going to eliminate 100% of elements from our drinking water. There are guidelines, set by the US. EPA, which measure water standards to make sure our water is safe,

“Acceptable” contamination levels of water are measured by two standards: maximum contaminant level (MCL) and maximum contaminant level goal (MCLG).

The goal indicates the level of contaminant at or below which is considered for human consumption. However, given the size of most water systems, today’s technological limitations, and the costs involved with water purification, it is impossi ble to provide the masses with water at or below goal level for all contaminants.

Because of these difficulties, the MCL standard was created as a compromise between public safety and feasibility, dictating levels that must be met before water is distributed to the public. This level is usually within 5% of acceptable contaminant rande.

Drinking Water Treatment Today:

The treatment of drinking water today continues to be largely based upon municipal filtration using chlorination or other means of disinfection (such as ozone and chloramines). While most municipal water treatment plants continue to use methods that have been in existence for hundreds of years, some newer types of treatment (such as activated carbon filtration and reverse osmosis) have been implemented in both public treatment plants and private homes. Water treatment methods will undoubtedly continue to evolve in coming years as newer, safer, and more efficient processes are developed.

Resources:

<http://www.epa.gov/safewater/consumer/pdf/hist.pdf>

http://www.randomhistory.com/1-50/001water.html